RAJYA SABHA

Tuesday, the 22nd November, 1988/ 1st Agrahayana 1910 (Saka)

The House met at eleven of the clock, **Mr. Chairman** in the Chair.

ORAL ANSWERS TO QUESTIONS

Establishment of International Centre of Genetic Engineering and Biotechnology in New Delhi

*161. SHRI SURENDRA SINGH THAKUR:†
SHRI SURESH PACHOURI:

Will the PRIME MINISTER be pleased to state:

(a) whether Government have signed an agreement with UNIDO for the establishment of an International Centre for Genetic Engineering and Biotechnology in New Delhi; and

(b) if so, what are the details thereof and whether Government would have a close supervision and control over its research and development activities so as to ensure that harmful viruses and bacteria do not get released in the environment?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI K. R. NARAYANAN): (a) and (b) A Statement is laid on the Table of the House.

Statement

(a) Yes, Sir. An Agreement has been signed between Government of India and the United Nations Industrial Development Organisation (UNIDO) on 25-3-1988 for the establishment of a Component of the International Centre for Genetic Engineering and Biotechnology (ICGEB) at New Delhi.

(b) The objective of the Agreement is the establishment of the New Delhi Component of the ICGEB, which includes provision for biotechnology research and development in the area of Agriculture, and Human & Animal Health. The Project is part of UNIDO's programme to develop and strengthen developing countries' technology capabilities in the increasingly important field of genetic engineering and biotechnology. Under the Agreement, the Govt. of Inida would provide building and equipments for the Centre and also meet local recurring cost. The salary of the internationally recruited scientists would, however, be met by UNIDO. The agreement, *inter alia*, contains a number of provisions for providing close supervision and control over the R&D activities from the point of view of safety. For the purpose a 5-member Standing Committee on Safety with three of them to be nominated by the Govt. of India will be responsible for close supervision and control over the R&D activities. The agreement calls for the Centre to strictly comply with the safety guidelines in the field of Recombinant DNA research (genetic engineering) that will be in force in the country from time to time. In addition, they will also strictly confirm to the safety guidelines of the National Institute of Health, USA. According to the agreement, the Centre would also fully comply with the provision of the environmental laws of India. The Centre has appointed a full time Safety Officer who will be incharge of all safety aspects. Records of all hazardous chemicals, biochemicals, biological materials and experiments covered under the DNA Safety Guidelines of

†The question was actually asked on the floor of the House by Shri Surendra Singh Thakur.

the Government of India shall be maintained for frequent monitoring and inspection by the authorities of the Govt. of India.

SHRI SURENDRA SINGH THAKUR: Mr. Chairman, Sir, the hon. Minister has said in his written answer that a 5-member Standing Committee on Safety with three of them to be nominated by the Government of India will be responsible for close supervision and control over the R&D activities. I would like to know whether it is a fact that the scientists working in this international centre can release harmful viruses or agents into the atmosphere or in our water system or in our sewerage system which can bring disaster in New Delhi as it happened in Bhopal. If so, what measures are being taken by the Government to check it?

SHRI K. R. NARAYANAN: Sir, under the agreement, the scientists working at this centre are not permitted to release any virus or any other agent into the atmosphere. The Centre is subject to the laws of India and the guidelines laid down by us in regard to safety. It is also subject to our environmental laws. On the top of it, there is a Standing Committee which exercises close supervision and control over the work at this centre. I submit, in this case, that there is no parallel with Bhopal. As far as the biotechnological institutes are concerned, they have been functioning during the last ten years and there have been no cases of any such accident not only in India but in other parts of the world also so far. Therefore, we have tried to incorporate into this agreement all possible safety precautions.

SHRI SURENDRA SINGH THAKUR: I would like to know from the hon. Minister whether the United Nations Industrial Development Organisation has signed such agreement with other countries also. If so, what are the names of these countries and to what extent the obpective of bringing the fruits of modern biotechnology to the developed countries will be achieved?

SHRI K. R. NARAYANAN: The UNIDO has signed an agreement with Italy. This Centre is in Trieste. In fact, this Inter-national Genetic Engineerring and Biotechnology Centre is situated in two places, one in Trieste and the other in New Delhi. The Italian Government have entered into an agreement with the Centre and it has been functioning. In India, this Centre has been functioning only during the last three weeks; that is, actual research has started only before three weeks. We hope to derive very substantial benefit in agriculture and in human as well as animal health out of the research that is being conducted here. Biotechnology is one of the brand new technologies which is applicable to industry, agriculture, medicine and it has a future which is considered to be the wave of the future more or less in science.

SHRI SURESH PACHOURI: Hon. Chairman, Sir. International Centre for Genetic Engineering and Biotechnology, New Delhi, has been established in JNU campus in the heart of the capital. I would like to know what advantages will India gain by having the Centre in New Delhi why it was not established in some other place away from population. Is it not a fact that the Ministry of Environment and forest has raised very serious objections to some of the clauses relating to safety in the agreement which was signed for UNIDO for even the interim period? Research has already started in this Centre in the last three months. Hon. Minister has just replied that a full-time offiser has been appointed. I would like to know, when did they appoint this officer, before asking this question or after this question?

SHRI K. R. NARAYANAN: Certainly, he has been appointed much before this question was asked as it is embodied in the agreement itself that such an officer will be appointed.

In the heart of the city there is already in the JNU campus National Institute of Immunology which is engaged in biotechnological work. So also the Department of Life Sciences of JNU is also engaged in this work and there are similar laboratories in other parts of India also. These laboratories pose no danger at all to the public or to the environment provided the normal guidelines and precautions laid by the Government and scientific institutions are observed.

SHRI SURESH PACHOURI: What about the objection of the Ministry of Environment and Forests?

SHRI K. R. NARAYANAN: They have in the agreement itself laid down that all the environmental laws of our country will be carried out by this Centre. Therefore, they could not have any objection at all on this point.

As regards research benefits, for example in agriculture, the Institute will be working on stressed tolerance in agriculturally important plants. One is for rice. In saline conditions, through biotechnological genetic engineering they are trying to introduce saline resistant varities. So also pesticide resistance in pulses and pest resistance in rapeseed and mustard seed. These are agriculturally important crops for India.

श्री अजीत जोशी: मान्यवर, यह प्रसन्नता की बात है कि भारत में इतना आधुनिकतम बायो-टेक्नोलोजी का संस्थान स्थापित किया गया है। मैं एक संदेह के विषय में माननीय मंत्री से जानना चाहूंगा, समाचार-पत्रों में ऐसे समाचार छापे गए थे कि इसी प्रकार के जो संस्थान अमरीका और दूसरे प्रगतिशील देशों में स्थापित किए गए हैं उनकी एलोकेशन या तो रेगिस्तान में है या वनों के आस पास है और आबादी से दूर स्थापित किए गए हैं तो मैं यह जानना चाहूंगा कि क्या यह सही बात है कि अमरीका और दूसरे राष्ट्रों में जो ऐसे संस्थान हैं वे आबादी से दूर स्थापित किए गए हैं और यदि यह सही बात है तो क्या यह जो संस्थान राष्ट्र की राजधानी में स्थापित कर दिया गया है उसे किसी रेगिस्तानी या जंगली इलाके में ले जाने पर विचार किया जायेगा?

SHRI K. R. NARAYANAN: Sir, these institutes are not like atomic reactors. These institutes do not have to be away from the centres of population. Now, the National Institute of Health in the United States is right in Washinton DC. The centre in Triest is in a populated area.

SHRI AJIT P. K. JOGI: I asked about the Biotechnology Research Centre in America.

SHRI K. R. NARAYANAN: In the National Institute of Health in the United States, biotechnology research is conducted. So also in such research conducted in Trieste. In fact Trieste is the sister institute of our institute in Delhi. Trere is absolutely no reason why it should be in a forest area or nearer a forest.

ठाकुर जगतपाल सिंह : सभापति महोदय, आदरणीय मिनिस्टर साहब से मैं यह जानना चाहूंगा कि इस सेण्टर की स्थापना जो की जा रही है, इसमें भारत सरकार और युनिडो का क्या-क्या वित्तीय योगदान है?

SHRI K. R. NARAYANAN: I want to explain, Sir, that at the moment this is an interim agreement with UNIDO. This is because, although about 41 countries have signed this agreement, it has not been ratified by a sufficient number of countries. So in the meantime, in order to enable the programmes to be executed, an interim agreement has been concluded between Government of India and UNIDO. The contribution from UNIDO comes mainly from the

Italian Government which has given about 20 million dollars, plus another 20 million dollars. It is not only for India but for sub-centres elsewhere. And the Indian contribution is about 20 crores.

SHRI NARREDDY THULASI REDDY: Which are the universities in which biotechnology courses have been introduced? How many students have come out so far from these universities in biotechnology? What are they doing? Is there any proposal to introduce biotechnology in one of the universities in Andhra Pradesh?

SHRI K. R. NARAYANAN: In Andhra Pradesh itself, we have a major Centre for Molecular and Cellular Biology, which is one of the major centres in genetic engineering and biotechnology.

As regards universities, I cannot give the names of all the universities, but I can give some of the major ones. Delhi, of course, is one of the universities also. Jawaharlal Nehru University in Delhi. Madurai Kamraj University has a major centre. And the Institute of Science in Bangalore has also a programme in biotechnology. I cannot give the number of students who have passed out of our universities in biotechnology, but I can say that our Department of biotechnology is encouraging by funding various courses in universities in order to build up manpower for our biotechnology programmes. We have also established fellowships and associateships in order to encourage this important discipline.

PROF. CHANDRESH P. THAKUR: Mr. Chairman, my question relates to the efforts made by India and the United Nations group of organisations in general and other inter-governmental agencies in particular. We welcome that India has established a Centre with the assistance of UNIDO. But by and large the story is that while India has been an enthusiastic participant in all U.N. bodies and contributor substantially and regularly amounts towards their resources, in terms of location of their branches or headquarters, or project/programme headquarters, India in particular and the developing countries in general are neglected.

Number two, the choice of issues undertaken for research or application programmes also does not have a priority with reference to Indian problems in particular, or the problems of developing countries or Third World countries in general.

Thirdly, in the choice of experts trained for the purpose of working with these agencies also a kind of systmatic discrimination—if not discrimination, a kind of priority—seems to be apparent generally in favour of developed countries people. Would the Government do something in this regard? At some stage a question was raised and the Government's reply was that a committee of the Government was looking into this matter. I do not know what the progress is in this regard.

SHRI K. R. NARAYANAN: Sir, I shall not attempt to answer the broader question about India's relationship with the United Nations with regard to U.N. agencies, but I shall try to answer the question with regard to this specific agency. As regards the International Centre for Genetic Engineering and Biotechnology, several countries were candidates for it. In fact, it was after great efforts on the part of India and our frinds that we got this Centre, and the solution was to divide the Centre into two—one for Trieste and one for Delhi. Therefore, in this particular field we have managed to get this International Centre for India. With regard to the choice of issues, the researches which are to be conducted at the Centre are all vitally necessary and relevant for India. One is with regard to agriculture, and I have mentioned what kind of research is being conducted there at the moment. But the scope of this research will be broadened to cover the entire

field of agriculture in order to introduce new biotechnological methods into it. We have also proposed to conduct research into diseases like Hepatitis-B and Malaria, which are dangerous diseases prevalent in India, in order to discover genetically engineered vaccines to overcome these diseases.

With regard to the choice of experts, already we have over 16 scientists in the Indian component of this Centre. Some of them are from abroad, but the UNIDO has appointed, actually, some of the distinguished Indians from India itself in the Centre. They have also appointed some non-resident Indians who are distinguished experts in these things. Therefore, we have, in fact, more than a fair share of Indian representation already at this institute.

SHRI BIR BHADRA PRATAP SINGH: Sir, so far as researches in India are concerned, in genetic engineering we have no match in the world. No United Nations agency can be a match to our researches. What we lack is funds and resources. But the honourable Minister has chosen to invite others. Genetic engineering is a part of biotechnology, and we had held a conference in October in India. My question would be, in spite of the fact that you have accepted it, instead of arranging funds for our scientists and our laboratories—because tropical regions are best suited for genetic engineering laboratories—may I know what would be the interaction between any United Nations agencies that you have established and our researches that are being carried out in our own laboratories? That is part (a) of my question. Part (b) of my question is, is it true that some developed countries want to turn the people in the developing countries into guinea pigs for their trials in the areas of genetic engineering and biotechnology and, if so, how will the Government ensure that such inhuman things do not take place? Why can't they make these experiments in their own countries? Why should the developing countries be turned into their laboratories, particularly when tropical countries are the best suited and our scientists are quite capable and far better? One of them has got the Nobel Prize and one is doing experiments at Varanasi without any research facilities. Why can't you pay money for the research work that is being done in India which is better than that of any United Nations agency?

SHRI K. R. NARAYANAN: Sir, as I have already said, we are doing everythtig possible to promote Indian scientists for doing advanced research in biotechnology in India and in the Indian universities and institutes themselves; there has been no slackening on that. This institute will not come in the way of these indigenous efforts of India. I am grateful to the honourable Member for paying such glowing compliments to Indian biotechnologists and genetic engineers. But this Centre will help Indian scientists further. There will be internationally reputed scientists at the Centre, who would interact with our scientists, something which our scientists are looking forward to because this is an international collaboration business, particularly this advanced Centre of Biotechnology. We will also have opportunities for our young scientists to get training in frontier areas of this technology at this Centre, and this will further enrich our own indigenous effort. Far from coming in the way of our own efforts, this will further stimulate research in our country in this field.

SHRI SANTOSH BAGRODIA: Sir, through you I would like to know from the hon. Minister, since Genetic Engineering and Biotechnology constitute frontier areas of science, whether the project is being pursued within the stipulated time frame or it is true that it has already been delayed.

Similarly, are the Indian saefguards for prevention of entry of harmful viruses, bacteria and other genetic material in the country as stringent as those normally practised in the USA and the USSR, and what is the machinery to enforec them?

SHRI K. R. NARAYANAN: Sir, as I mentioned earlier, we are going ahead with research in the field of Genetic Engineering and Biotechnology. There is no slackening in this. As a previous speaker has said, Indian scientists are very advanced in this particular field, but we are further encouraging the development of research in this field.

Sir, as early as 1983 India had set up a committee to go into the question of safeguards in respect of Biotechnology research. This shows our awareness of the subject, and they have come out with guidelines that all the Indian institutions, universities and other authorities should follow while conducting this research. These guidelines have been upgraded in 1967 in view of further developments in Biotechnology. We are fairly advanced. As I have said in this Agreement, we have also insisted that the standard set by the National Institute of Health in the United States should also be followed by this particular Centre because it is considered as a model set of guidelines.

SHRI GHULAM RASOOL MATTO: Mr. Chairman, Sir, I was reading an article the other day in which details were given about how genetic engineering is going to transform the whole world. It was given that the size of the corn will be four times its present size. It was also given that you can grow oranges as big as water melons. So, it was also stated in the article...

SHRI N. K. P. SALVE: It will be terrible, Sir, if that happens.

SHRI V. GOPALSAMY: What about human beings?

SHRI N. K. P. SALVE: The Nagpur region will suffer incalculably, terribly if that happens to oranges.

SHRI GHULAM RASOOL MATTO: It was also stated that Genetic Engineering is the science of the future. So, keeping that in view, I congratulate the Government that they have set up this Insitute.

I have two small questions: Is this Institute's research going to be applied to horticulture, floriculture and agriculture also because with regard to floriculture also there is a lot given in that article, how they can do that? Will these also come under the amott of this?

SHRI V. GOPALSAMY: Flowers will bloom like an umbrella.

SHRI GHULAM RASOOL MATTO: Have we got the necessary manpower trained to meet this challenge?

These are my questions.

SHRI K. R. NARAYANAN: Sir, I think, all that was said by the hon. Member are possibilities. Some of them are very wild. But I can assure that flowers of Kashmir can be made more beautiful and bigger through biotechnology. There are immense possibilities in this field for agriculture, for industry, for health, for animal production and for horticulture. In fact, there was the other day a very interesting editorial in the New York Times according to which the chemical pesticides and fertilisers which they called 'the brutal technology of chemicals", weedicides, pesticides and all that, in fact destroyed as much crops in the United States as were destroyed before the invention of new chemical pesticides etc. And the solution has been projected as biologically engineered agents, pests resistent, weed resistant, disease resistant agents not only for a healthy growth, but also for a good environment for growth of new

species etc. I think this is a field which we ought to enter into wholeheartedly and support the research and development.

श्री रजनी रंजन साहू: सभापति महोदय, जैनेटिक इंजीनियरिंग और बायोटक्नॉलॉजी में हो रही रिसर्च को देखते हुए मैं मंत्री महोदय से जानना चाहूंगा कि क्या भारत के सभी चिकित्सीय संस्थानों, औद्योगिक संस्थानों और विश्वविद्यालयों में जैनेटिक के क्षेत्र में खोज के लिए केन्द्र स्थापित किए जाएंगे और इन शिक्षा संस्थानों के जैनेटिक खोज कार्य पर क्या प्रभाव पड़ेगा और दोनों के बीच इंटर-एक्शन कैसा रहेगा, यह भी बताने की कृपा करेंगे?

SHRI K. R. NARAYANAN: Yes, Sir, we are helping the establishment of research units in various universities. As I said, the Department of Bio-technology has a fairly big programme for funding in order to make such research possible and the research can be expected to be beneficial.

PROF. C. LAKSHMANNA: Sir I have got two small questions to ask.

MR. CHAIRMAN: After this I will take up the next question. Let Prof. Lakshmanna ask. I am giving time to professors.

SHRI DIPEN GHOSH: Does he suffer from genetic disability that he requires genetic engineering. Because they suffer from that, that is why they are interested.

PROF. C. LAKSHMANNA: I have got only two small questions in two parts. Firstly, this institute has been established under UNIDO programme to develop and strengthen the genetic technology and so forth. I would like to know specifically what is the linkage which they see between the Indian institutions and this particular institution which is being established. I say this because we had a very sad experience in the case of ICRISAT. It was established with a view to developing such linkages. Unfortunately there has been no development of linkage and they have been doing isolated research and it has not been put to use in this country.

Similarly, to safeguard this Institute, I would like to know what is the institutional linkage which has been established between different institutions in the country and this International Centre for Genetic Engineering.

Secondly, in the matter of recruitment will there be two scales operative or only one scale? In the case of ICRIST there has been one scale for the recruits from India and another scale for those who have been recruited internationally. Will there be such discrimination in terms of recruitment policy when this institute recruits people from India?

SHRI K. R. NARAYANAN: About the linkages there is a very close linkage with the Jawaharlal Nehru University. It has been set up in Delhi itself. That is, in the Institute itself there is a very close linkage.

PROF. C. LAKSHMANNA: What is the institutional linkage? Where it has been located does not indicate the loactional linkage.

SHRI K. R. NARAYANAN: This is a separate institute, but it will interact with other institutes and research centres in India. Also some of the scientists appointed are actually distinguished scientists working in other institutes. There is no formal linkage established as far as I know, but, as I said, this is an interim agreement. A formal and final agreement will have to be signed with this Centre then the whole Agreement is ratified by the requisite number of countries.

*162. (*The questioners (Shri Ashwani Kumar and Shri Lal K. Advani)* were absent for answer, vide col. 30-31 infra)